

REMARKS

Claims 10-12 and 14-28 are pending in the subject application. By the instant amendment, claims 25 and 27 are amended to correct errors of a typographical/editorial nature. In the amendment filed on October 8, 2002, temperature values were inadvertently changed in claims 25 and 27. No new matter is added by the amendments to claims 25 and 27, as the amendments made thereto are to correct the errors made in the October 8, 2002, amendment, and to return the temperature values in claims 25 and 27 to the values in the application as originally filed.

Claims 10-12, and 14-28 are submitted to the Examiner for further prosecution on the merits.

A. Introduction

In the outstanding Office Action mailed December 13, 2002, the Examiner withdrew the indicated allowability of claims 13 and 20-21 in view of a newly discovered prior art reference, United States Patent No. 5,907,382 to Kajiura et al. ("the Kajiura et al. reference"). The Examiner rejected claims 10-12 and 14-22 under 35 U.S.C. § 103 (a) as being unpatentable over the applicants' admitted prior art ("AAPA") in view of United States Patent No. 5,738,911 to Imamura et al. ("the Imamura et al. reference"), United States Patent No. 6,338,868 to Shibuya et al. ("the Shibuya et al. reference"), United States Patent No. 5,974,666 to Tanaka et al. ("the Tanaka et al. reference"), and the Kajiura et al. reference. The Examiner indicated that claims 23-28 were allowable.

B. Asserted Rejections Under 35 U.S.C. § 103 (a)

In the outstanding Office Action, the Examiner rejected claims 10-12 and 14-22 under 35 U.S.C. § 103 (a) as being unpatentable over the AAPA in view of the Imamura et

al. reference, the Shibuya et al. reference, the Tanaka et al. reference, and the Kajiura et al. reference.

However, applicants respectfully traverse these rejections and submit that two of the cited prior art references are non-analogous prior art.

In order to rely on a reference as a basis for rejecting an applicant's claimed invention, the reference must either be in the field of applicant's endeavor, or if not, then be reasonably pertinent to the particular problem with which the invention is directed.

In Re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992).

The presently claimed invention is directed to a method of forming a silicon oxide layer using a spin-on-glass (SOG) composition useful in forming a silicon oxide layer in a semiconductor manufacturing process. In contrast, the Imamura et al. reference and the Tanaka et al. reference relate to forming a liquid-jet recording head and a charging device in an image forming apparatus, respectively. Accordingly, it is respectfully submitted that the Imamura et al. reference and the Tanaka et al. reference belong to an entirely different technical field than the present invention as claimed and therefore constitute non-analogous prior art. Further, the remaining prior art references fail to teach at least the SOG composition containing perhydropolysilazane having the compound formula - $(\text{SiH}_2\text{NH})_n$ - where n represents a positive integer, and curing the SOG layer to form a layer of silicon oxide having a planar surface, as claimed in independent claims 10 and 20 of the present invention. Accordingly, claims 10 and 20 are believed to be in condition for allowance. Further, because claims 11-12, 14-19 and 21-22 depend, either directly or indirectly, from either claim 10 or 20, claims 11-12, 14-19 and 21-22 are believed to be similarly allowable as depending from an allowable base claim.

Accordingly, reconsideration and withdrawal of the rejections of claims 10-12 and 14-22 are respectfully requested.

C. Allowed Subject Matter

In the outstanding Office Action, the Examiner found claims 23, 25 and 27 to be allowable, indicating that none of the cited prior art references teach main baking the SOG layer at a temperature within a range of about 900 to 1000 °C for a second period of time.

However, only claim 23 claims a temperature range of 900 to 1000 °C, as claims 25 and 27 were inadvertently amended to claim the indicated temperature range in the amendment filed on October 8, 2002. Claims 25 and 27 have been amended to recite the correct temperature ranges in the instant amendment.

Claim 27 has been amended to recite, in part, "main-baking the SOG layer at a temperature within the range of about 400 to about 450 °C for a second period of time," as originally claimed by claim 27. None of the cited prior art references teach this temperature range for the main, or second, baking treatment of the perhydropolysilazane. Accordingly, claim 27 is believed to remain in condition for allowance.

Claim 25 has been amended to recite, in part, "main-baking the SOG layer at a temperature within the range of about 600 to about 900 °C for a second period of time," as originally claimed by claim 25. As previously stated, neither the Imamura et al. reference nor the Tanaka et al. reference teach art within the field of present invention as claimed, nor are they reasonably pertinent to the particular problem with which the presently claimed invention is concerned.

Rather, the Imamura et al. reference and the Tanaka et al. reference relate to forming a liquid-jet recording head and a charging device in an image forming apparatus, respectively, while the presently claimed invention relates to a method of forming a silicon

oxide layer using a spin-on glass (SOG) composition useful in forming a silicon oxide layer in a semiconductor manufacturing process.

Accordingly, it is respectfully submitted that the Imamura et al. reference and the Tanaka et al. reference constitute non-analogous prior art. Further, because the remaining prior art references fail to teach at least the SOG composition containing perhydropolysilazane having the compound formula $-(\text{SiH}_2\text{NH})_n-$ wherein n represents a positive integer, as claimed in claim 25, claim 25 is believed to be in condition for allowance.

D. Conclusion

Since two of the cited prior art references are directed to non-analogous prior art, applicants respectfully submit that claims 10-12 and 14-28 are in condition for allowance, and a notice to such effect is respectfully requested.

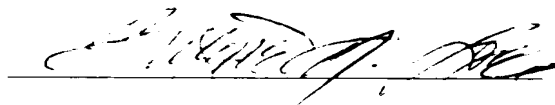
Finally, if the Examiner believes that additional discussions or information might advance the prosecution of the instant application, the Examiner is invited to contact the undersigned at the telephone number listed below to expedite resolution of any outstanding issues.

In view of the foregoing amendments and remarks, reconsideration of this application is respectfully requested, and an early and favorable action upon all the claims is hereby requested.

Respectfully submitted,

LEE & STERBA, P.C.

Date: March 13, 2003



Eugene M. Lee, Reg. No. 32,039
Richard A. Sterba, Reg. No. 43,162

1101 WILSON BOULEVARD, SUITE 2000
ARLINGTON, VA 22209
703.525.0978 TEL
703.525.4265 FAX

PETITION
and
DEPOSIT ACCOUNT CHARGE AUTHORIZATION

This document and any concurrently filed papers are believed to be timely. Should any extension of the term be required, applicant hereby petitions the Director for such extension and requests that any applicable petition fee be charged to Deposit Account No. 50-1645.

If fee payment is enclosed, this amount is believed to be correct. However, the Director is hereby authorized to charge any deficiency or credit any overpayment to Deposit Account No. 50-1645.

Any additional fee(s) necessary to effect the proper and timely filing of the accompanying-papers may also be charged to Deposit Account No. 50-1645.